

Notice No.3

Rules and Regulations for the Classification of Ships using Gases or other Low-flashpoint Fuels, July 2018

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2019

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Part A-1, Sections 5, 6, 11, 12 & 15	1 July 2019	1 July 2019
Part B-1, Section 16.2	1 July 2019	N/A
Part B-1, Section 16.7	1 July 2019	1 July 2019

Part A-1

Specific Requirements for Ships Using Natural Gas as Fuel

5 Ship Design and Arrangement

5.6 Regulations for ESD-protected machinery spaces

5.6.4 Distribution of engines between the different machinery spaces shall be such that shutdown of fuel supply to any one machinery space does not lead to an unacceptable loss of power.

LR 5.6-02 Where gas leakage in an ESD-protected machinery space would result in the shutdown of the engine(s) in that space, sufficient propulsion and manoeuvring capability including essential and safety systems is to be maintained. The minimum power to be maintained shall be assessed from the operational characteristics of the ship, subject to consideration by LR. The safety concept of the engine shall clearly indicate application of the 'double wall' or 'single wall' arrangement. It shall be noted that the 'safety concept' is a document describing the safety philosophy with regard to gas as fuel. It describes how risks associated with this type of fuel are controlled under reasonably foreseeable abnormal conditions as well as possible failure scenarios and their control measures. A detailed evaluation regarding the hazard potential of injury from a possible explosion is to be carried out and reflected in the safety concept of the engine.

6 Fuel Containment System

6.4 Regulations for liquefied gas fuel containment

LR 6.4-15 Where a vessel is intended to operate in cold climates, the temperature on exposed surfaces is to be considered. See the ~~Provisional Rules for the Winterisation of Ships~~ *Rules for the Winterisation of Ships, July 2019*.

6.8 Regulations on loading limit for liquefied gas fuel tanks

6.8.2 In cases where the tank insulation and tank location make the probability very small for the tank contents to be heated up due to an external fire, special considerations may be made to allow a higher loading limit than calculated using the reference temperature, but never above 95%. This also applies in cases where a second system for pressure maintenance is installed, (refer to 6.9). However, if the pressure can only be maintained / controlled by fuel consumers, the loading limit as calculated in 6.8.1 shall be used.

LR 6.8-01 The alternative loading limit option given under 6.8.2 is an alternative to 6.8.1 and shall only be applicable when the calculated loading limit using the formulae in 6.8.1 gives a lower value than 95 per cent.

11 Fire Safety

11.3 Regulations for fire protection

11.3.1 Any space containing equipment for the fuel preparation such as pumps, compressors, heat exchangers, vaporizers and pressure vessels shall be regarded as a machinery space of category A for fire protection purposes.

LR 11.3-01 Fire protection in 11.3.1 refers to structural fire protection, not including means of escape.

LR 11.3-02 Enclosed spaces containing equipment for fuel preparation, such as pumps or compressors or other potential ignition sources, are to be provided with a fixed fire-extinguishing system complying with the provisions of SOLAS II-2/10.4.1.1 and the FSS Code, and taking into account the necessary concentrations / application rate required for extinguishing gas fires.

11.3.3 The space containing fuel containment system shall be separated from the machinery spaces of category A or other rooms with high fire risks. The separation shall be done by a cofferdam of at least 900 mm with insulation of A-60 class. When determining the insulation of the space containing fuel containment system from other spaces with lower fire risks, the fuel containment system shall be considered as a machinery space of category A, in accordance with SOLAS regulation II-2/9. The boundary between spaces containing fuel containment systems shall be either a cofferdam of at least 900 mm or A-60 class division. For type C tanks, the fuel storage hold space may be considered as a cofferdam.

LR 11.3-03 The following 'other rooms with high fire risk' shall as a minimum be considered, but not be restricted to:

- (a) cargo spaces except cargo tanks for liquids with flashpoint above 60°C and except cargo spaces exempted in accordance with SOLAS regulations II-2/10.7.1.2 or II-2/10.7.1.4;
- (b) vehicle, ro-ro and special category spaces;

- (c) service spaces (high risk): galleys, pantries containing cooking appliances, saunas, paint lockers and store-rooms having areas of 4 m² or more, spaces for the storage of flammable liquids and workshops other than those forming part of the machinery space, as provided in SOLAS regulations II-2/9.2.2.4, II-2/9.2.3.3 and II-2/9.2.4; and
- (d) accommodation spaces of greater fire risk: saunas, sale shops, barber shops and beauty parlours, and public spaces containing furniture and furnishing of other than restricted fire risk and having deck area of 50 m² or more, as provided in SOLAS regulation II-2/9.2.2.3.

Existing paragraphs LR 11.3-01 to LR 11.3-02 have been renumbered LR 11.3-04 to LR 11.3-05.

12 Explosion Prevention

12.5 Hazardous area zones

(Part only shown)

12.5.2 Hazardous area zone 1²²

This zone includes, but is not limited to:

.1 tank connection spaces, fuel storage hold space²³ and interbarrier spaces;

LR 12.5-02 For the purposes of hazardous area classification, fuel storage hold spaces containing Type C tanks with all potential leakage sources in a tank connection space and having no access to any hazardous area, shall be considered non-hazardous.

LR 12.5-03 Where the fuel storage hold spaces include potential leak sources, e.g. tank connections, they shall be considered hazardous area zone 1.

LR 12.5-04 Where the fuel storage hold spaces include bolted access to the tank connection space, they shall be considered hazardous area zone 2.

Existing paragraphs LR 12.5-02 to LR 12.5-06 have been renumbered LR 12.5-05 to LR 12.5-09.

15 Control, Monitoring and Safety Systems

15.3 Regulations – General

15.3.2 A bilge well in each tank connection space of an independent liquefied gas storage tank shall be provided with both a level indicator and a temperature sensor. Alarm shall be given at high level in the bilge well. Low temperature indication shall activate the safety system.

LR 15.3-03 The level indicator is required for the purposes of indicating an alarm status only; a level switch (float switch) is an instrument, for example, considered to meet this requirement.

15.4 Regulations for bunkering and liquefied gas fuel tank monitoring

(Part only shown)

15.4.2 Overflow control

.3 The position of the sensors in the liquefied gas fuel tank shall be capable of being verified before commissioning. At the first occasion of full loading after delivery and after each dry-docking, testing of high level alarms shall be conducted by raising the fuel liquid level in the liquefied gas fuel tank to the alarm point.

LR 15.4-02 The expression 'each dry-docking' refers to:

- a) for cargo ships, the survey of the outside of the ship's bottom required for the renewal of the Cargo Ship Safety Construction Certificate and/or the Cargo Ship Safety Certificate; and
- b) for passenger ships, the survey of the outside of the ship's bottom to be carried out according to paragraphs 5.10.1 and 5.10.2 of the Survey Guidelines under the Harmonized System of Survey and Certification.

Existing paragraph LR 15.4-02 has been renumbered LR 15.4-03.

15.10 Regulations for ventilation

15.10.1 Any loss of the required ventilating capacity shall give an audible and visual alarm on the navigation bridge or in a continuously manned central control station or safety centre.

LR 15.10-01 Acceptable means to confirm that the ventilation system has the required ventilating capacity in operation are, but not limited to:

- c) Monitoring of the ventilation electric motor or fan operation combined with underpressure indication; or
- d) Monitoring of the ventilation electric motor or fan operation combined with ventilation flow indication; or
- e) Monitoring of ventilation flow rate to indicate that the required air flow rate is established.

Part B-1

Manufacture, Workmanship and Testing

16 Manufacture, Workmanship and Testing

16.2 General test regulations and specifications

16.2.1 Tensile test

LR 16.2-01 The grades of materials used are to generally have mechanical properties complying with the appropriate requirements as given in the Rules for Materials. ~~Generally, Provided that the material has satisfactory ductility, there will be no limitation on the yield to tensile stress ratio, except for ferritic carbon–manganese steel grades for low temperature service, provided the material has satisfactory ductility.~~ For ferritic carbon–manganese steel grades for low temperature service, the yield to tensile ratio requirement of ~~Chapter 3, Section 6 of the Rules for Materials~~ *Ch 3, 6 Ferritic steels for low temperature service of the Rules for the Manufacture, Testing and Certification of Materials, July 2018* is to be met.

16.7 Testing regulations

16.7.1 Type testing of piping components

(Part only shown)

LR 16.7-01 For further details on the type testing of piping components, reference is to be made to LR 5.13-01, LR 5.13-02, ~~and LR 5.13-03 and LR 5.13-04 of the Rules for Ships for Liquefied Gases~~ *Rules and Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk, July 2018, Incorporating Notice No.1.*

16.7.2 Expansion bellows

LR 16.7-02 For further details on the type testing of expansion bellows, reference is to be made to ~~LR 5.13-04 and~~ LR 5.13-05 and LR 5.13-06 of the ~~Rules for Ships for Liquefied Gases~~ *Rules and Regulations for the Construction and Classification of Ships for the Carriage of Liquefied Gases in Bulk, July 2018, Incorporating Notice No.1.*

© Lloyd's Register Group Limited 2019
Published by Lloyd's Register Group Limited
Registered office (Reg. no. 08126909)
71 Fenchurch Street, London, EC3M 4BS
United Kingdom

Lloyd's Register and variants of it are trading names of Lloyd's Register Group Limited, its subsidiaries and affiliates. For further details please see <http://www.lr.org/entities>

Lloyd's Register Group Limited, its subsidiaries and affiliates and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.